THE STATE

OF FAMILIES, 3

LOSING DIRECTION

Families, Human Resource Development, and Economic Performance

RAY MARSHALL

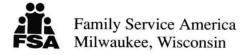


THE STATE OF FAMILIES, 3

LOSING DIRECTION

Families, Human Resource Development, and Economic Performance

RAY MARSHALL





Copyright © 1991 Family Service America 11700 West Lake Park Drive Milwaukee, Wisconsin 53224

ISBN 0-87304-249-2

All rights reserved. None of the content of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means (electronic, mechanical, photocopying, recording, or otherwise) without the prior written permission of the publisher.

Library of Congress Cataloging-in-Publication Data (Revised for vol. 3)

The State of families.

Includes bibliographical references.

Contents: — v. 2. Work and family — v. 3. Losing direction / Ray Marshall.

1. Work and family—United States. 2. United States—Social conditions—1980—

I. Marshall, Ray. II. Family Service America.

HD4904.25.S83 1987 306.8'5'0973

ISBN 0-87304-226-3 (pbk.: v. 2)

87-24374

Preface

This is the third in a series on the state of families. Since 1984, Family Service America (FSA) has commissioned these publications in order to illustrate with hard data the conditions facing American families. Initially, in the first volume, we examined the general trends of American family life and expectations for the future. The second report, *The State of Families*, 2, examined more closely the relationship between work and family, because we were observing problems that evolved from the growing immersion of families in work outside the home.

During the past several years, member agencies of FSA have been reporting an increase in economic factors intensifying or causing family problems. In particular, family service agencies have been struck by the economic disadvantages faced by single parents. This led to participation in a research project, the Adolescent Family Project, which studied the plight of young, pregnant, single women.

Another FSA study, American Families in Trouble, surveyed a broad cross section of the families using family service agencies. This, the largest survey of its kind, showed that these families were losing ground in the American economy. (For a summary of this study and the Adolescent Family Project, see Appendix B.) In addition, Family Service America's Committee on Government Relations, a board subcommittee, recommended that FSA attend to the plight of working families who remain in poverty or economically marginal circumstances, despite the employment of one or more family members.

All of these activities suggested that we needed to develop an overview of how families relate to the economy and particularly to consider why America is home to a growing number of disadvantaged and economically vulnerable families. We felt that our *The State of Families* series provided the appropriate vehicle with which to do this.

We found an extraordinary author for our current volume. Dr. Ray Marshall is both a distinguished scholar in economics and an influential leader in social policy. Currently he holds the Audre and Bernard Rapoport Centennial Chair in Economics and Public Affairs at the University of Texas at Austin. Previously he was Secretary of Labor of the United States between 1977 and 1981. He holds

many distinguished offices in the worlds of foundations, technology, industry, research, and education. He is a prolific writer in many of these fields. Best of all, he is a humanitarian who cares deeply about how human beings fare in the larger society and the possibilities for the improvement of quality of life.

Dr. Marshall's observations reflect what we see as a service organization, that growing numbers of families find themselves at a serious disadvantage in the American economy. Dr. Marshall, however, projects the problem on a much wider screen, the growth of a world economy. He carefully links family life with economic facts. He sees the family as both the victim of problems within the economy and a potential resource with which to improve it. The reader of this publication will share Dr. Marshall's vision of a world-class American economy and how families can both benefit from it and contribute to it.

The conclusions reached herein detail what is new in American family life and how that has produced more families at risk. Dr. Marshall's recommendations are particularly directed to these families as well as to the need to prepare children for an education that helps them to compete in a new world economy. Although his policy recommendations are not officially those of Family Service America, we recommend their consideration as new family policies are forged under new world conditions.

Geneva B. Johnson President and CEO Family Service America

Acknowledgments

The material for this publication was developed over a number of years and owes much to many people. My earliest thinking about the importance of family naturally derives from my own childhood experience, in which my parents, especially my mother, taught me the importance of values and thinking skills as the surest guides to personal conduct. Later, as a child in the Mississippi Baptist Orphanage, I learned that caring institutions and individuals could compensate for the loss of natural parents. My wife, Pat, and our five children also have helped me to understand the importance of close family relations for the development of both children and parents.

As a labor economist and Secretary of Labor, I learned how important human resource development is for national and personal economic welfare and how important families are for human resource development. These experiences also convinced me that the American economic policymaking process is deficient because of its neglect and even denigration of family and human resource development matters. All too often these issues are considered to be "social" and therefore "soft" areas not appropriate for economic policy.

My understanding of these matters further deepened as a result of some of my activities during the 1980s, especially my work as a member of the steering committee of the Economic Policy Council of the United Nations Association of the U.S.A. (EPC-UNA) and as a trustee of the Carnegie Corporation of New York. The EPC-UNA Family Policy Panel, chaired by Alice Ilchman and John Sweeney, with staff assistance and direction from Sylvia Hewlett, synthesized a wealth of information about families and the economy. The work of the Family Policy Panel demonstrated that too many male business and economic specialists considered family subjects to be appropriate considerations mainly for women, despite the demonstrated importance of these matters for economic performance.

I have, in addition, benefited greatly from my association with the staff and trustees of the Carnegie Corporation, which has a deep and abiding interest in the development of and prevention of damage to children and families. David Hamburg, Carnegie's president, and Vivien Stewart, program officer in charge

of matters related to education, families, and youth, have taught me a lot about the subjects covered in this book. I am especially grateful to David and Vivien for reading and commenting on an earlier draft of this manuscript. David Hamburg and his wife, Betty, have, in addition, taught me much about early childhood and adolescent development. I am also indebted to Ruby Takanishi, director of the Carnegie Council on Adolescent Development, for collecting and synthesizing material that helped me understand the serious problems faced by adolescents and their families in today's rapidly changing world. My fellow Carnegie trustee Jim Comer helped me understand the importance of parental involvement for school restructuring. Marc Tucker, Lewis Branscomb, Jim Hunt, Alden Dunham, and others associated with the Carnegie Task Force on Education and the Economy, as well as Ira Magaziner, Bill Brock, and the members of the Commission on the Skills of the American Workforce, helped me understand the relationships among economic performance, school restructuring, human resource development, and families.

In addition, Shirley McBay, Bernie Charles, and the members of the Action Council on Minority Education provided valuable information and ideas on the unique problems of disadvantaged minority families. My former student, Ernie Cortes, head of the Texas Industrial Areas Foundation (TIAF), helped me understand how important "mediating institutions" are for the development of families with little economic or political power; Ernie and his TIAF associates also demonstrated that hard work and effective organizing can empower these parents and strengthen families, community organizations, and democratic processes. Larry Mishel, at the Economic Policy Institute, has been an extremely valuable source of good data and analysis on the economy in general, but especially on the conditions of American workers and their families.

Several colleagues at the University of Texas helped me with this volume. I am grateful to David Warner and David Austin for comments on an early draft. Bob Glover, Luis Plascencia, Bob Nielsen, and the students in several policy research projects assisted me with material and discussions of the importance of early childhood development, school-based services, and parental education. I am grateful to my research assistant, Jon Wainwright, for invaluable bibliographical and statistical help. I owe a great debt to Cheryl McVay, not only for her invaluable help with manuscripts and scheduling, but also for her efficient work, helpful comments, and encouragement in the development of this manuscript. Finally, I owe Family Service America many thanks for providing me the opportunity to pull these materials and experiences together in this book.

It goes without saying, of course, that despite much help and many valuable suggestions, I alone am responsible for the judgments and recommendations in this monograph. I hope they will contribute to stronger families and therefore to a stronger America.

Ray Marshall Austin, Texas April 13, 1991

Contents

Preface	vii
Acknowledgments	ix
1 Introduction	1
The Economic and Demographic Context	5
3 Changes in Family Structure	25
Family Employment, Income, and Wealth: Growing Inequalities	33
5 International Perspectives	53
6 Family Policy Issues	63
7 Summary and Recommendations	103
A Appendix A: Tables 2.1 to 5.6	113
B Appendix B: Related Family Service America Research Projects	145

1

Introduction

The economy and the well-being of families are inextricably linked in a close, symbiotic relationship. Family financial security is derived mainly from paid work, and most adults organize their lives around their workday and identify themselves at least in part by the work they do. The earnings and working conditions of family members affect their economic and emotional welfare as well as their family relationships. Family relationships, in turn, strongly influence human resource development, which has become the most important factor in determining personal incomes and national economic performance.

The Family as a Learning System

It is vitally important for economic and social policymakers to recognize that the quality of a nation's human resources depends significantly on what happens to its families. The family is a major institution that preserves the physical and cultural linkages among people and their past, present, and future. It is also the institution within which most basic human development takes place. Families are critically important learning systems, a fact that we are increasingly coming to realize. The intensification of international business competition during the 1970s and 1980s made it very clear that a nation's economic strength depends heavily on the quality of learning within the family as well as in the schools. Mounting empirical evidence suggests that the nature of the relationship between parents and children from infancy on can have lasting effects on the children's cognitive, social, physical, and emotional development. Furthermore, children acquire the values that guide their personal conduct from their parents and extended family, peers, and community institutions.

The family as a learning system has been influenced significantly by the nature of parents' work. When the family was the main economic producing unit, as it was in preindustrial times, children could learn about work by observing their parents and actively participating in work themselves. Participation not only helped children learn but affected their emotional development as well, because they learned early on to enjoy the satisfaction and sense of personal accomplish-

Many families
are losing their
effectiveness as
positive learning
systems at the very
time that national
and personal economic performance
depend more heavily
on higher-order

thinking skills.

In a technologically sophisticated world, people will either be economic assets or liabilities. Healthy, educated, motivated people are virtually unlimited assets, but people without these characteristics are likely to be serious economic liabilities.

ment that come from contributing to the family's welfare. They also learned firsthand about the extent to which their parents sacrificed to care for them.

Changes in 20th-Century Family Life

The changes that have taken place in families during this century, especially since World War II, have aroused considerable concern among social policy analysts. Family relationships have been altered, and the kinds of values that are formed and types of nurturing and learning that occur within the family have changed. The traditional family of the post-World War II generation, in which the father's earnings were the sole source of income and the mother worked mainly at home, has become a much smaller proportion of all families today. Most mothers of small children now work at jobs outside the home. Not only has work for pay become much more important in the lives of women, but the increased employment of mothers has interacted with developments in technology and the economy in order to produce some very important changes in living arrangements for men, women, and children.

American Family Dilemmas

The family, like the surrounding economy and society, is much less stable than it was earlier in this century. Children no longer learn about their parents' work by firsthand observation and experience and no longer gain a sense of personal satisfaction from contributing to the family's material welfare. Parents also spend much less time with fewer children, and a greater number of fathers than ever before abandon or never care for their children. At the same time, however, the increased earnings of women have made it possible to improve the material welfare of some families and for parents to give higher priority to the development of their children if they wish to do so.

More children are nevertheless growing up in single-parent and unstable families. Single-parent families, especially those headed by women, are less likely to have the necessary physical and emotional resources to nurture their children. With some remarkable exceptions, many families are losing their effectiveness as positive learning systems at the very time that national and personal economic performance depend more heavily on higher-order thinking skills. Children from disadvantaged families are likely to start school with inadequate preparation to perform at grade level. And early disadvantages are likely to be cumulative, causing children to fall farther and farther behind the longer they stay in school. Many will drop out, greatly increasing the risks of debilitating activities that will shorten their lives and reduce their developmental chances. These trends imply a growing polarization between those families that are good development systems and those that are not.

These problems do not pertain only to families and individuals, however. In an increasingly interdependent and technologically sophisticated world, people will either be economic assets or liabilities. Healthy, educated, motivated people are virtually unlimited assets, but people without these characteristics are likely to become serious economic liabilities. At the same time, the growing polarization of family incomes and life experiences has serious implications for the nation's political, social, and economic health. Under modern conditions, inequalities in wealth and income make it very difficult for countries to achieve the internal unity needed to solve their problems. As the experience of the United States and various developing countries demonstrated during the 1980s, governments of countries that have

citizens with widely unequal distributions of income have trouble taxing highincome groups and must borrow to pay their bills. Large external debts then create further economic and social problems.

These interrelated changes in families and the economy have reduced the effectiveness of the principles that served both institutions very well during America's economic "golden era" between 1945 and 1970. Our public-policy challenge, therefore, is to develop ways to support families so they can function effectively in a more dynamic, globally interrelated, knowledge-intensive world.

From an economic perspective, the symbiotic relationships between families and the economy require that businesses, schools, labor organizations, religious institutions, community organizations, and governments all develop policies that will help families with diverse needs. The well-being of nations and individuals depends on how social institutions compensate for some of the child-care, learning, and other developmental services formerly performed by the family, even though it is highly unlikely that any of these social institutions can ever substitute very effectively for families.

Because of the changes that have occurred in families, the principles and values that guided past generations are less useful to the more fluid and diverse families of the 1990s and beyond. Family health and national welfare, therefore, depend on the ability of families to develop new principles to guide them in a more dangerous and uncertain world.

Similarly, economic and social changes also have reduced the effectiveness of the national policies that served past generations of Americans so well. New public policies must be formulated that reflect the requirements of a fundamentally different economic and social environment. It is the basic thesis of this monograph that the dependence of economic success upon human resources demands that we develop more comprehensive economic and social policies that will support the role of families.

My main objective is to clarify the symbiotic relationships between families and the economy in order to provide the factual and analytical bases for public and private family policies. Economic and social policies can be improved with a better understanding of the interrelationships between families and the economy. In order to achieve these objectives, this monograph outlines the economic, demographic, and labor-market contexts within which families function; examines changing family structures, especially those that have developed since World War II; considers family income and employment relationships in the United States; and compares the United States with other industrialized democratic countries. The last two sections analyze important issues brought about by changes in families and the economy and offer recommendations as to how our country might better support families.

Our public-policy challenge is to support families so they can function effectively in a more dynamic, globally interrelated, knowledge-intensive world.

The Economic and Demographic Context

The future of American families is not predetermined, but depends heavily on the choices made by families, employers, and especially public institutions. An important lesson that history has taught us in the United States and abroad is that family policy choices are closely related to, and have important implications for, other economic and social policies.

National economic performance depends significantly on the extent to which family policies are integrated with other policies. The need for high-performance production systems in a more competitive global economy causes families to be increasingly important to a nation's economic, political, and social health. At the same time, of course, a society's ability or willingness to support families depends not only on the economy's strength, but also on the extent to which family policies are compatible with general economic policies.

In order to help clarify the context within which family policy choices must be made, this chapter explores the following hypotheses:

- 1. Our basic economic and social policies are rooted in the mass production/ natural resource economy that made the United States the world's leading industrial nation during the first half of this century. These policies were reinforced by macroeconomic policies that were basically designed to sustain the mass-production system and make it more equitable.
- 2. Mass production and its supporting economic policies have become anachronisms because of changing technology and the globalization of economic activity. In a competitive global economy, economic viability requires greater attention to quality, productivity, and flexibility, all of which were a good deal less important to mass-production systems.
- 3. These changes require that companies or countries that wish to be high-income, world-class players adopt very different economic and human resource development policies.
- 4. The United States is losing its status as a high-performance country because its economic and human resource development systems and policies have been slow to adjust to this more competitive world. A failure to adapt implies economic decline, growing inequalities in wealth and income, and declining real wages.

A major problem for mass-production companies was controlling markets and prices in order to maximize profits. These firms avoided price competition by varying output and employment while holding prices relatively constant.

Welfare and industrial relations policies reinforced price policies. Unions, collective bargaining, unemployment compensation, Social Security, and other family-support systems were justified as ways to sustain purchasing power.

The Changing Economy

Traditional family structures are deeply rooted in the economic policies and institutions that made the United States the world's strongest economy during the first half of this century. Besides our free institutions and a steady supply of highly motivated workers, the most important factors in America's economic success were abundant natural resources and the mass-production system, which made it possible to achieve relatively rapid improvements in productivity and total output through economies of scale and reinforcing developments among industries, whereby advances in one industry led to improvements in others. A high-quality work force resulted from the migration of highly motivated people from other countries and rural areas and a universal free public school system that produced a population with adequate levels of education to function well in the industrial economy.

The Mass-production System

The mass-production system organized work so that most thinking, planning, and decision making was done by managerial, professional, and technical elites. Line work was simplified so that it could be done by relatively unskilled workers. The assumption was that "one best way" existed to perform a task. It was management's responsibility to discover that method and impose it on the system through procedures that could be enforced by supervisors and inspectors. Management assumed that workers would loaf unless they were closely supervised. Therefore, work processes were standardized and ideas, skills, and knowledge were transferred to managers and machines. The monotonous and degrading working conditions that resulted were made more bearable by higher wages than could be earned on the farm or in the home countries of the immigrants who flocked to America's factories, mills, and mines during the early part of this century.

However, the system had some serious weaknesses, most of which were gradually worked out by the 1940s. A major problem for mass-production companies was controlling markets and prices in order to maximize profits and justify the large investments required for equipment and plants. These firms therefore avoided price competition and adjusted to change mainly by varying output and employment while holding prices relatively constant.

But once mass-production companies stabilized the prices of their products, they experienced cyclical instability because production (supply) tended to outrun demand at administered prices. In the democratic industrialized countries, this problem was fixed through so-called Keynesian monetary and fiscal policies, which manipulated government spending and interest rates to generate enough total demand to keep the system operating at relatively low levels of unemployment.

Welfare (or "income maintenance") and industrial relations policies reinforced price policies. Unions, collective bargaining, unemployment compensation, Social Security, and other family-support systems were justified as ways to sustain purchasing power and provide support for people who were not expected to work as well as to counteract the market system's natural tendency to produce inequities. During this period, it was assumed that almost all mass-production workers would be males. Women were heavily concentrated in service occupations, teaching, and health care. Originally, the welfare system was conceived mainly for the support of widows, orphans, the elderly, and the handicapped. Although many large companies were initially reluctant to accept such policies, by the time of the Great Depression of the 1930s, they could see the wisdom of providing purchasing power to people who could not work. Business support for the system grew when it became clear that these policies were not really going to

challenge business control of the economy. The policies were merely intended to codify work-force practices, protect workers from some of the more arbitrary company practices, and provide income for people who were not able to work. The unemployment-compensation and welfare systems also helped companies maintain their work forces by providing income support during layoffs, thus, in effect, supplementing wages.

Policymakers in all industrialized democracies came to accept the theory that income supports not only sustained purchasing power and relieved human misery, but promoted economic efficiency as well. It was generally recognized that a function of public policy was to maximize the market-oriented mass-production system's obvious advantages by minimizing or compensating for its equally obvious weaknesses. Socioeconomic theorists, like the Webbs, argued that removing labor from competition through collective bargaining, government regulations, and family-support systems increased efficiency by preventing companies from depressing labor standards, thus forcing them to compete by becoming more efficient. The Webbs reasoned that employers who paid less than the living wage were being subsidized either by workers and their families or by society. Such subsidies therefore generated inefficiencies and made it difficult for countries to develop their human resources. Income-support systems, by contrast, helped families preserve themselves and raise their children.

Both the mass-production system and its supporting policies were justified by the American economy's remarkable performance in World War II. After the war, the combination of economies of scale, abundant natural resources, strong global demand, and a backlog of technology ushered in the longest period of equitably shared prosperity in human history. In most democratic industrial countries, the system's enormous economic advantages made it possible to maintain a humane income-support system for those who, according to society, could not or should not work.

The American System Erodes

Toward the end of the 1960s, it gradually became clear that some of America's traditional economic policies and institutions were no longer working as well as they had in the past. Technological change and increased international competition rendered much of the traditional mass-production system and its supporting institutions much less effective. The conditions for economic viability were also dramatically altered. In a more competitive world dominated by knowledge-intensive technology, the key to economic success became human resources and a more effective organization of production systems, not natural resources and traditional economies of scale. Indeed, as the work of Theodore Schultz and other economists demonstrated, the process of substituting knowledge and skills for physical resources has been the main source of improved productivity at least since the 1920s.²

Technology not only contributed to the globalization of markets but also made the mass-production system and traditional economies of scale less important. Although assembly lines can be automated, automation is not the most efficient use of the new technology. Computerized technology allows many of the benefits of economies of scale to be achieved through flexible manufacturing systems, which have enormous advantages in a more dynamic and competitive global economy. The new technology provides economies of scope as well as scale because the same technology can be used to produce different products.

After World War II, the combination of economies of scale, abundant natural resources, strong global demand, and a backlog of technology ushered in the longest period of equitably shared prosperity in human history.

Toward the end of the 1960s, technological change and increased international competition rendered much of the traditional mass-production system and its supporting institutions much less effective.

One of the more important economic developments in the past two decades, for public policy purposes, is that national governments have less control of their economies.

In the more competitive global information economy, success requires greater emphasis on quality, productivity, and flexibility.

Technology makes new organizations of production possible, but competition makes them necessary. A competitive, internationalized, informationoriented economy has very different requirements for national, organizational, and personal success than do largely national goods-producing systems. One of the more important economic developments in the past two decades, for public policy purposes, is that national governments have less control of their economies. It is no longer possible for a single country to maintain high wages and full employment through traditional combinations of monetary and fiscal policies, administered wages and prices, and fixed exchange rates. In the 1970s and '80s, internationalization weakened the link between domestic consumption, investment, and output that had formed the basic structure of the traditional Keynesian demand-management system. The weakening of these linkages became very clear when in the early 1980s tax cuts in the United States increased consumption but also greatly stimulated imports. The tax cuts thus produced much smaller increases in domestic investment than had earlier tax cuts in less globalized markets. The weakening of economic performance, symbolized by declining growth in productivity and total output, led to policy confusion in the United States and reduced support for programs to aid low-income people.

The High-Performance Workplace

Low Wages or Higher Quality and Productivity?

These new economic conditions do not just change the requirements for economic success—they fundamentally alter the necessary structures and policies. In the more competitive global information economy, success requires greater emphasis on factors that were much less important in traditional mass-production systems: quality, productivity, and flexibility. Because these new requirements apply to schools and social service organizations that serve families, they need to be understood by those concerned primarily with family policy. In other words, they apply to all organizations, not just businesses.

Quality, best defined in this context as meeting the needs of customers (or members, clients, students), becomes more important for two reasons. First, as the mass-production system matured and personal incomes rose, consumers became less satisfied with standardized products. Second, the more competitive environment of the 1990s is largely consumer driven. The mass-production system was more producer driven, especially after governments and large corporations "stabilized" prices. In the more competitive environment of the 1970s, administered prices became less tenable; flexible prices became essential to the viability of companies in global markets. Furthermore, the mass-production system depended heavily on controlling national markets; with internationalization, American companies have much less market control.

Productivity and flexibility are closely related to quality. The difference is that now productivity improvements are achieved through using all factors of production more efficiently, not, as in the mass-production system, mainly through economies of scale and reinforcing shifts of resources from less to more productive sectors. Indeed, in the 1970s and '80s, interindustry shifts lowered productivity growth because they were, on balance, away from more productive manufacturing activities to less productive services.

Flexibility enhances productivity by facilitating the shift of resources to more productive outputs and improves quality through the ability to respond quickly to diverse and changing consumer needs. Moreover, flexibility in the use of workers and technology improves productivity by reducing the waste of labor and physical capital.

Firms and economies can compete in more global, knowledge-intensive markets either by lowering wages or by becoming more productive. Since the early 1970s, American companies have been competing mainly through reducing wages and shifting production facilities to low-wage countries. This is one of the reasons real wages are lower in the United States in 1990 than they were in 1970, and why in 1989 American wages ranked about 10th among the major industrialized countries.³

Worker Participation and Learning Skills

How can production be organized in order to achieve quality, productivity, and flexibility? By restructuring production systems and developing and using leading-edge technologies. Productivity is improved by organizations that reduce waste of materials through better inventory control, promote the efficient use of labor, and develop more effective quality controls to prevent defects. High-performance systems have a high degree of employee involvement in what were once considered management functions in mass-production systems. Indeed, in more productive and flexible systems, the distinctions between managers and workers become blurred.

High-performance production systems encourage worker participation. Workers must have more knowledge and skill. And skilled, educated workers are less tolerant of monotonous, routine work and authoritarian management. In addition, quality, productivity, and flexibility are enhanced when production decisions are made as close to the point of production as possible. Mass-production managerial bureaucracies were designed to achieve quantity output, managerial control, and stability, not flexibility, quality, or productivity in the use of all factors of production. Mass-production systems were based on managerial information monopolies and worker controls; high-performance systems require that workers be free to make decisions. To accomplish this, information must be shared, not hoarded, because in high-performance systems machines do more of the routine, direct work and people do more indirect work. One of the most important skills required for indirect work is the ability to analyze the flood of data produced by information technology. Workers who can impose order on chaotic data can use information to add value to products, solve problems, and improve their company's productivity, quality, and technology.

Indirect work also is more likely to be group work, requiring more communication and interpersonal skills. Productivity, quality, and flexibility require close coordination among functional groupings that were formerly more discrete components of the production process (e.g., research and development, design, production, inspection, distribution, sales, services). In the mass-production system, relationships among these functional departments were more linear; in dynamic, customer-oriented production systems, the relations are more interactive.

In high-performance systems, workers must have the ability to learn. Learning is not only more important than it is in mass-production systems, it also is very different. The simplification of tasks and the standardization of technology and productivity in the mass-production system limited the amount of learning needed or achieved by workers. More learning is required in a dynamic, technology-intensive workplace and much of that learning must occur through the manipulation of abstract symbols. For line workers, mass-production systems stressed learning almost entirely by observation and doing.

High-performance systems have a high degree of employee involvement in what were once considered management functions. Indeed, in more productive and flexible systems, the distinctions between managers and workers become blurred.

More learning is required in a dynamic, technology-intensive workplace and much of that learning must occur through the manipulation of abstract symbols.